

An Introduction to MOVES: County Data Manager

FHWA Resource Center
EPA Office of Transportation and Air Quality



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Presentation Outline

- Setting up the County Data Manager.
- Examples of entering county specific data.
- Issues and limitations.

County Domain

- Users must use the County scale for SIP and Conformity analysis.
- County scale requires entering county specific data.
- Access to default data is limited.

Setting up a County Domain

- **Set up a Run Specification file first.**
 - This enables MOVES to filter the default database for relevant information
- **The RunSpec must have:**
 - Only a single county selected.
 - Only a single calendar year selected.
- **Create a County Domain database to store the information, and a separate database to store the results for the county.**

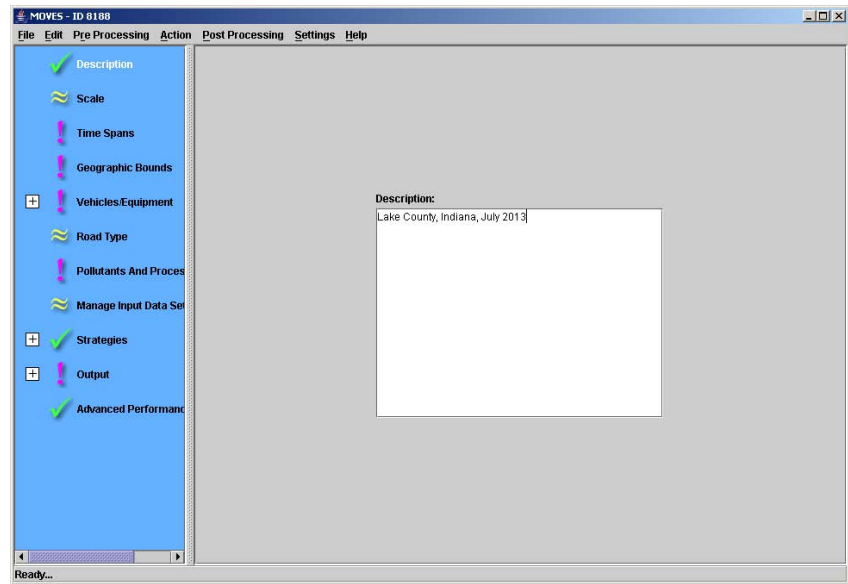
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We will be using the County Data Manager to set up the county database.

Setting up a Run Specification

- MOVES cannot run without a valid Run Specification (runspec).
- A runspec indicates the location, time period, alternate data and output preferences.
- Runspecs can (should) be saved and can be re-loaded to be run again and/or edited.
- The GUI panels are used to set up your runspec.

Description

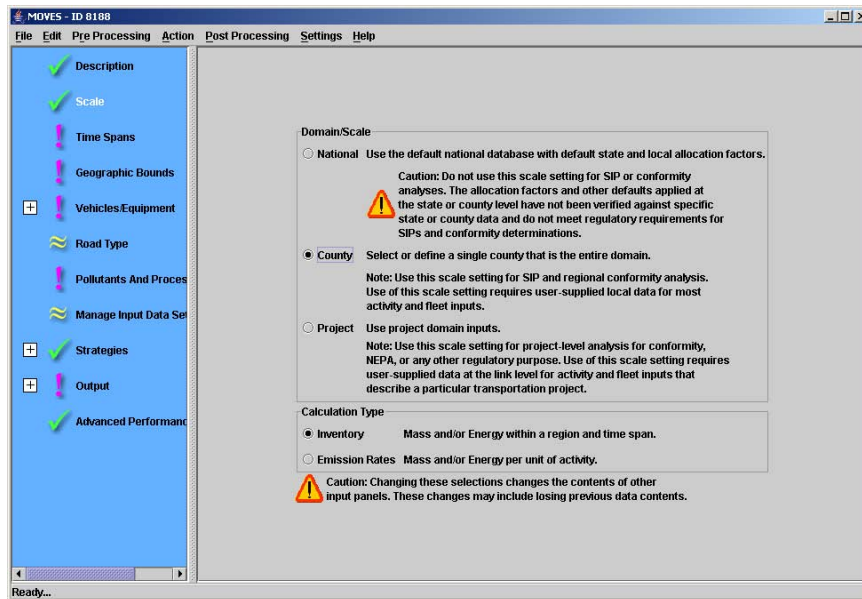


6

This panel shows where you can describe your analysis.

A good description will help you keep track of your results.

County Scale



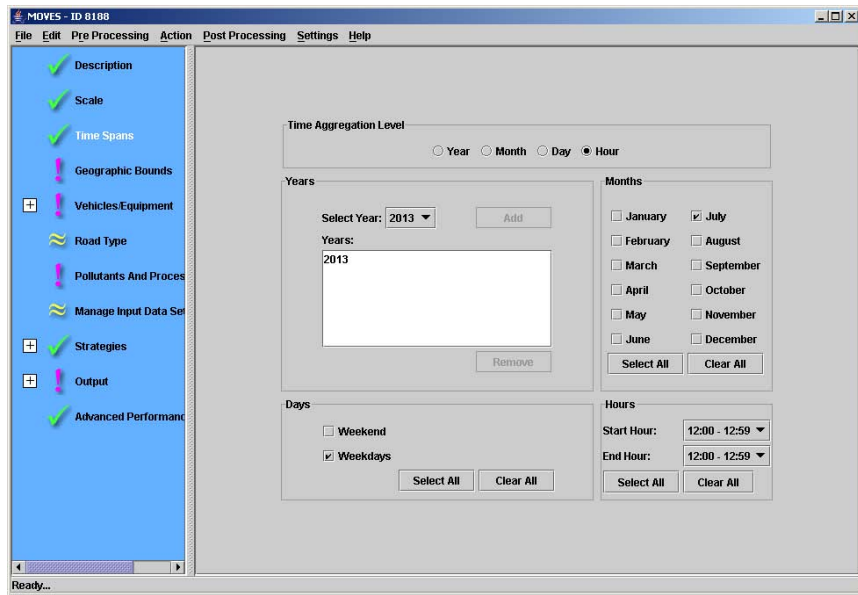
7

This panel is used to select the scale of the analysis.

Select County. Select Inventory. (We will discuss the Emission Rates option later.)

Selecting County will require the use of the County Data Manager.

Time Span



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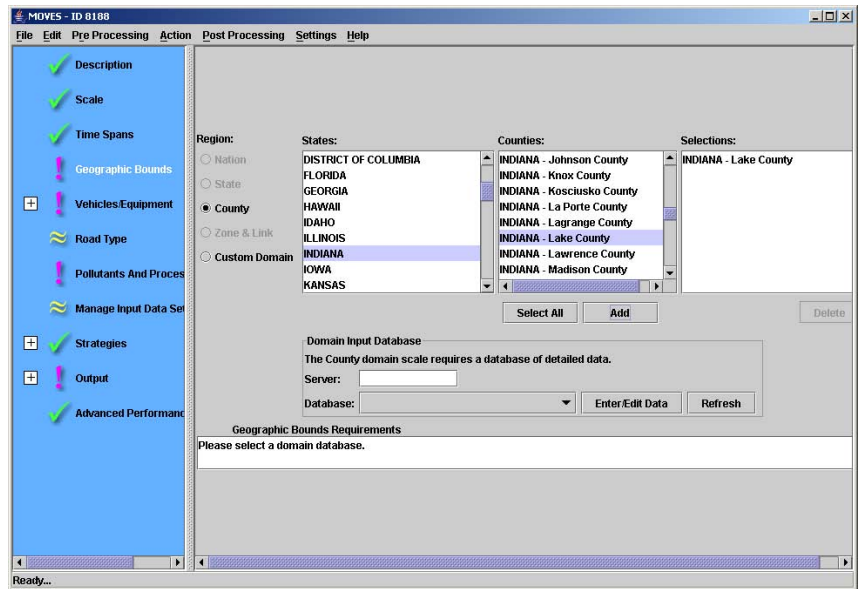
This panel is used to select the time period you wish to include in the output.

You may select only one year if you wish to use the County Data Manager.

Geographic Bounds: County

- Once you have selected the County scale, you may only choose a single county from the list.
- Choosing a county selects the available default data stored for that county.
- You must first select a calendar year for analysis (previous screen).
- You must create or select a database to store the county specific data. (done later)

Select a single County

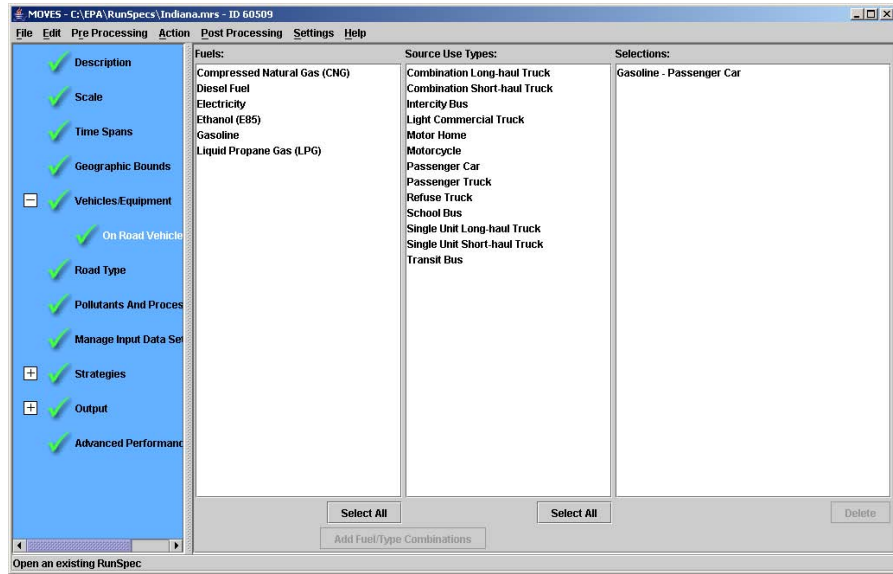


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This panel is used to select a county.

You may only select one county if you wish to use the County Data Manager.

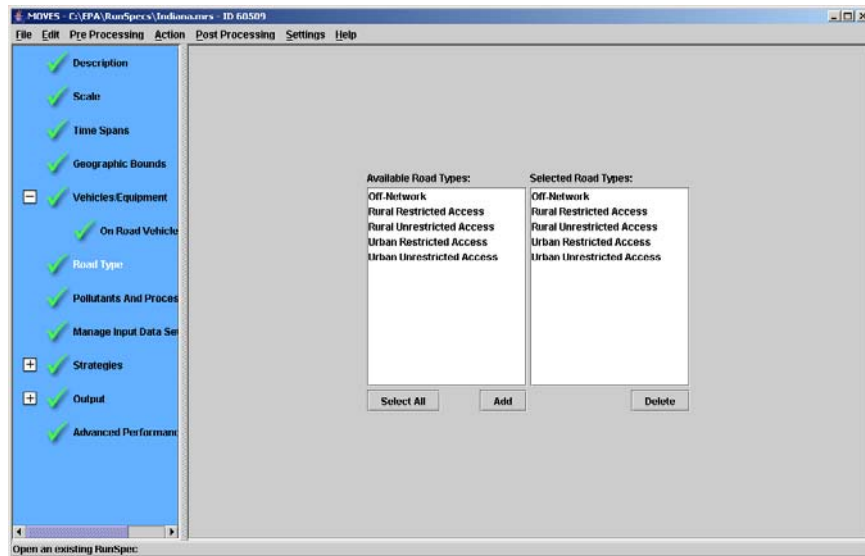
Select fuel/vehicle combinations.



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This panel is used to select the fuel types and source use types to be included in the output.

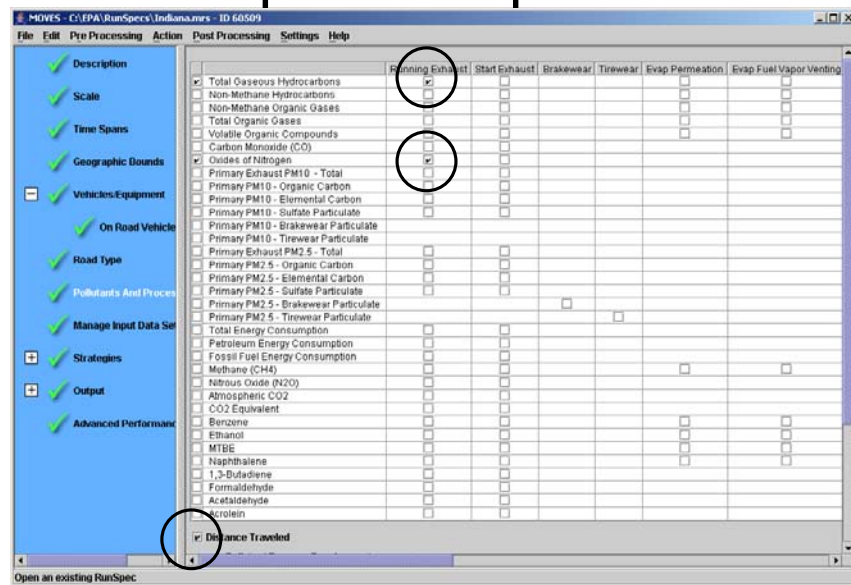
Select road types.



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This panel is used to select the road types to be included in the output.

Select pollutant/processes.

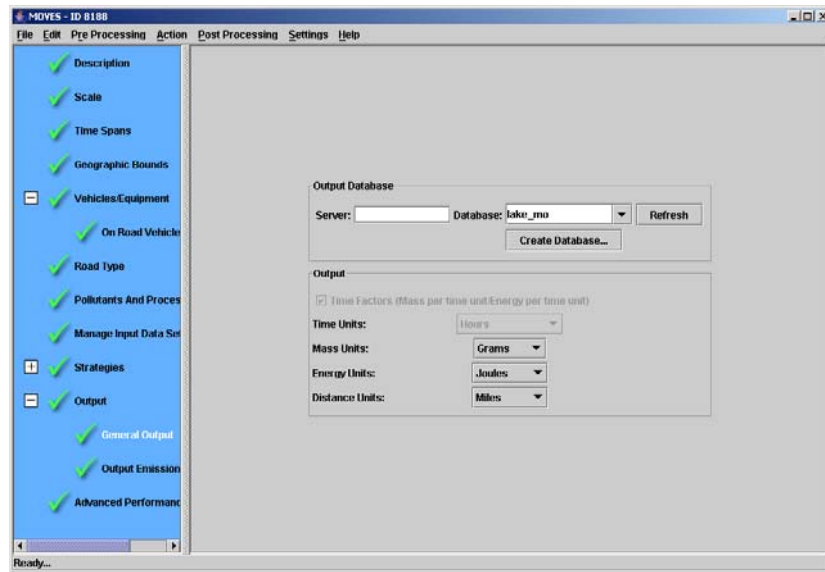


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This panel is used to select the pollutants and processes to be included in the output.

The activity (vehicle miles traveled, VMT) can also be selected here. If you do not choose this option, there will not be VMT values in the output database.

Create a new output database.

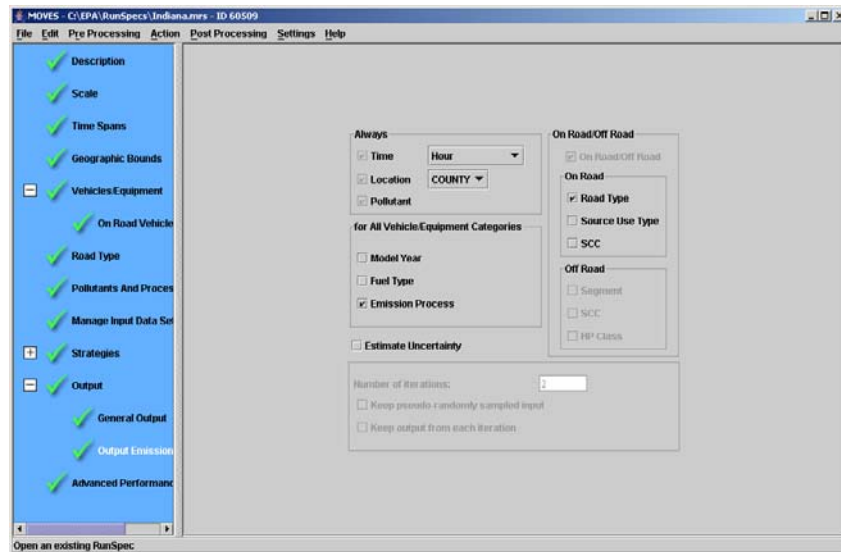


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This panel is used to create (or choose) an output database and the time units for the output tables.

This information will be stored in the output database for reference.

Choose output granularity.



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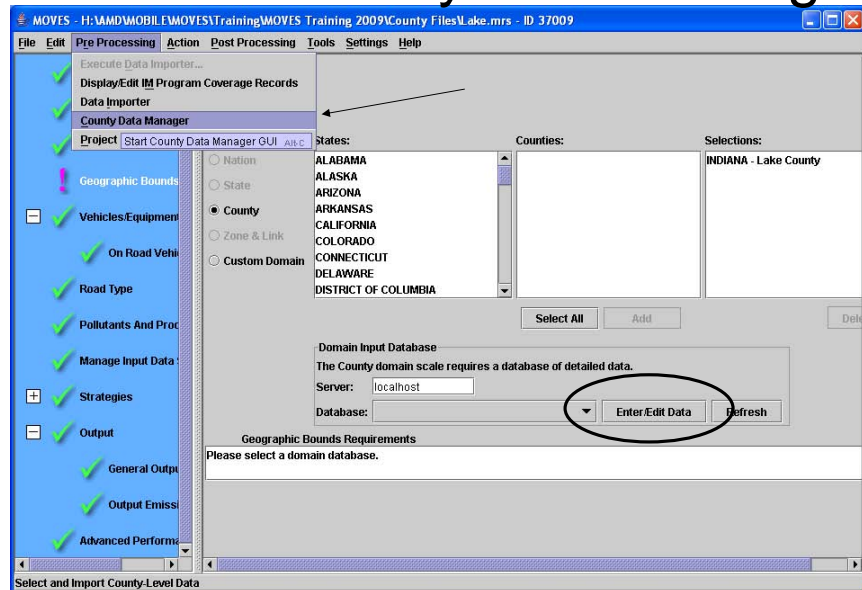
This panel determines the detail contained in the output. The output will be by pollutant (always), hour, county, emission process and road type.

The user could also choose model year, fuel type and source use type or SCC (source classification code).

Completed Run Specification

- Save your run specification.
- Use naming conventions (like .mrs for MOVES run specification)
- Although the run specification is complete, it will not run without entering county specific information.
- Use the County Data Manager to enter data.

Go to the County Data Manager

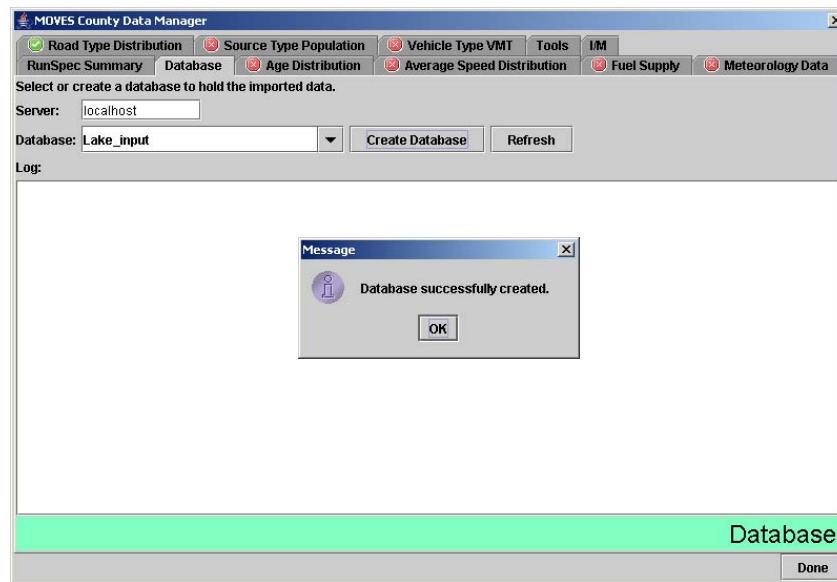


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Since we do not have a county database yet, we must create one.

Use the Enter/Edit Data button to go to the County Data Manager.

Create an input database

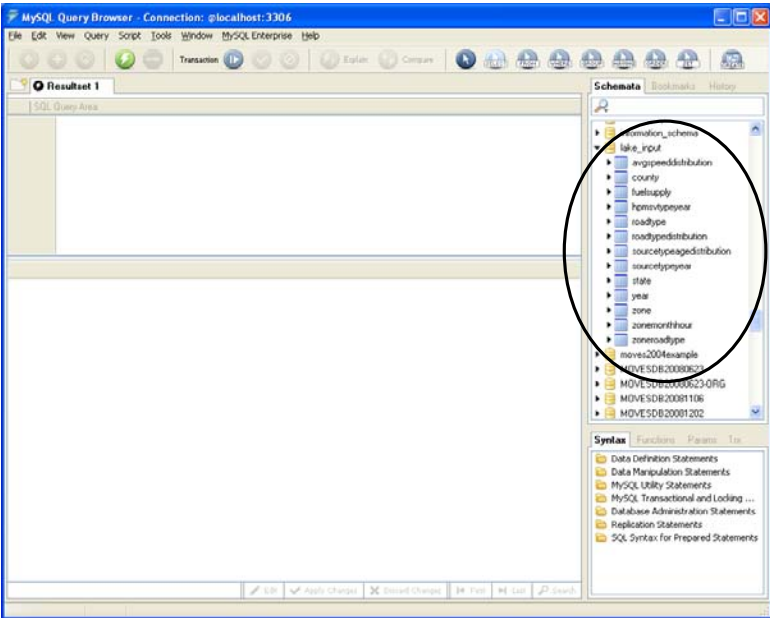


This is the County Data Manager. You can also get here from the pull-down Pre-Processing menu.

Enter the name you wish for your database (no spaces or special characters) and push the Create Database button.

When you create a database, you will get this pop-up message to indicate that the database was successfully created.

These empty tables were created.



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This slide shows the MySQL Query Browser showing the tables contained in the county database we just created.

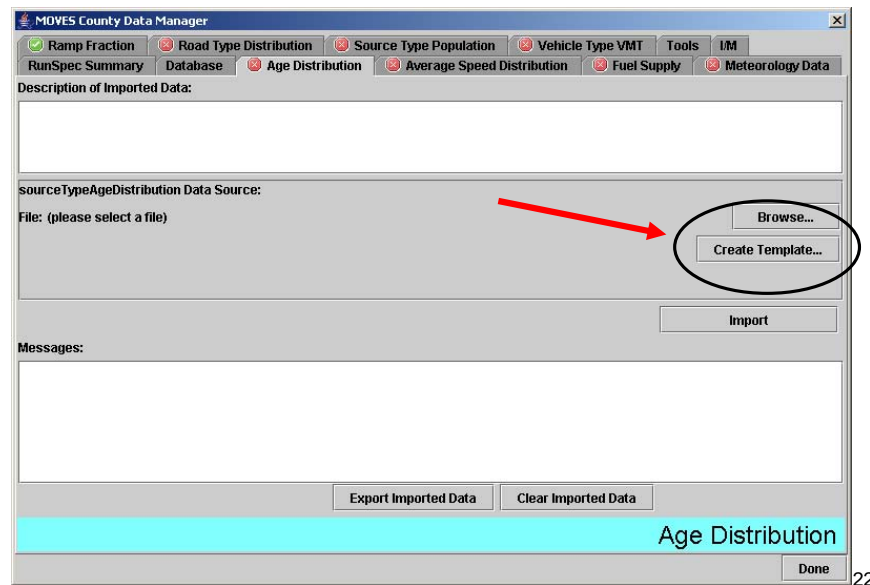
County Data Manager

- Export templates (or default data).
- Enter/edit the data in MS Excel files.
- Import the data to your input database.

Export Template

- Most parameters can be entered using a spreadsheet.
- The run specification will determine the scope of the template that is presented.
- Use the XLS extension to get a spreadsheet format.
- Extra tabs will help you decode the categorical values.

Export Template



This panel shows where on the panel the button is to initiate the creation of a template for this information (age distribution).

The screenshot shows a Microsoft Excel spreadsheet titled "LakeAgeDistributionTemplate.xls". The spreadsheet has a table with the following columns: sourceType, yearID, ageID, and ageFraction. The data is organized into rows, with the first row (row 1) containing the headers. The subsequent rows (rows 2 through 33) contain data for sourceType 21, yearID 2013, and ageID values ranging from 0 to 30. The ageFraction column is empty for all rows.

sourceType	yearID	ageID	ageFraction
21	2013	0	
21	2013	1	
21	2013	2	
21	2013	3	
21	2013	4	
21	2013	5	
21	2013	6	
21	2013	7	
21	2013	8	
21	2013	9	
21	2013	10	
21	2013	11	
21	2013	12	
21	2013	13	
21	2013	14	
21	2013	15	
21	2013	16	
21	2013	17	
21	2013	18	
21	2013	19	
21	2013	20	
21	2013	21	
21	2013	22	
21	2013	23	
21	2013	24	
21	2013	25	
21	2013	26	
21	2013	27	
21	2013	28	
21	2013	29	
21	2013	30	

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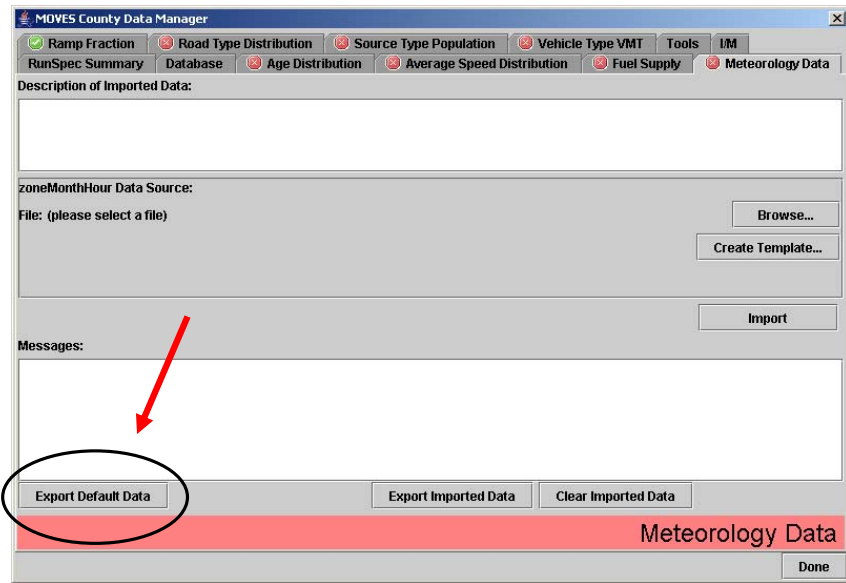
Notice that all of the ageFraction cells are empty. This is where the data will go.

Notice that there are tabs which explain the AgeCategory and SourceUseType fields.

Export Default Data

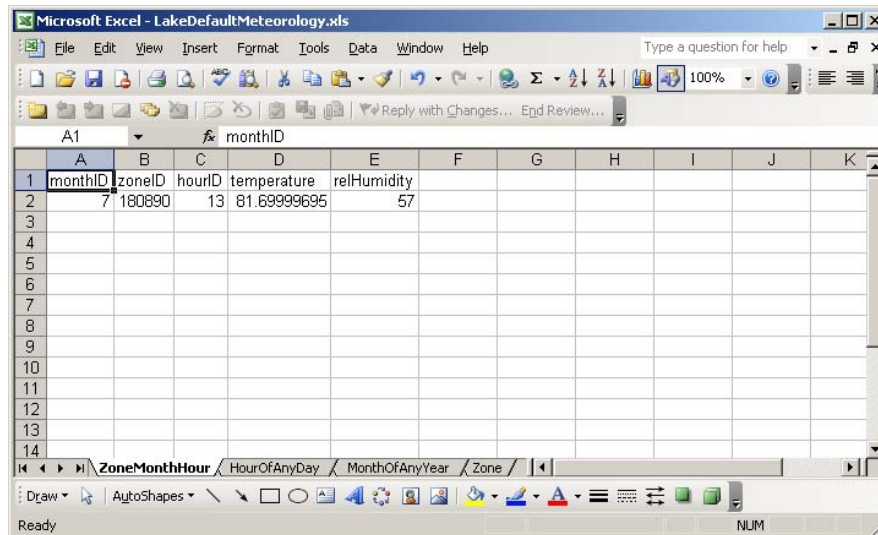
- **Only some parameters have default data available.**
 - Average Speed Distribution
 - Fuel Supply
 - Meteorology Data
- **The run specification will determine the amount of default data that is presented.**
- **Use the XLS extension to get a spreadsheet.**
- **Extra tabs will help you decode the categorical values.**
- **In most cases, users should not use default data.**

Export Default Data



This panel shows where on the panel the button is to export default data from the MOVES database. Not all import panels can access default data.

Default Meteorology



The screenshot shows a Microsoft Excel window titled "Microsoft Excel - LakeDefaultMeteorology.xls". The spreadsheet has columns labeled A through K. The first row (row 1) contains headers: "monthID" in A1, "zoneID" in B1, "hourID" in C1, "temperature" in D1, and "relHumidity" in E1. The second row (row 2) contains data: "7" in A2, "180890" in B2, "13" in C2, "81.69999695" in D2, and "57" in E2. The rest of the rows are empty. The status bar at the bottom shows "Ready" and "NUM".

monthID	zoneID	hourID	temperature	relHumidity
7	180890	13	81.69999695	57

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Note that only the location, month and hour selected in the run specification is shown.

Note that there are tabs that decode the hour of the day, month of the year and zone.

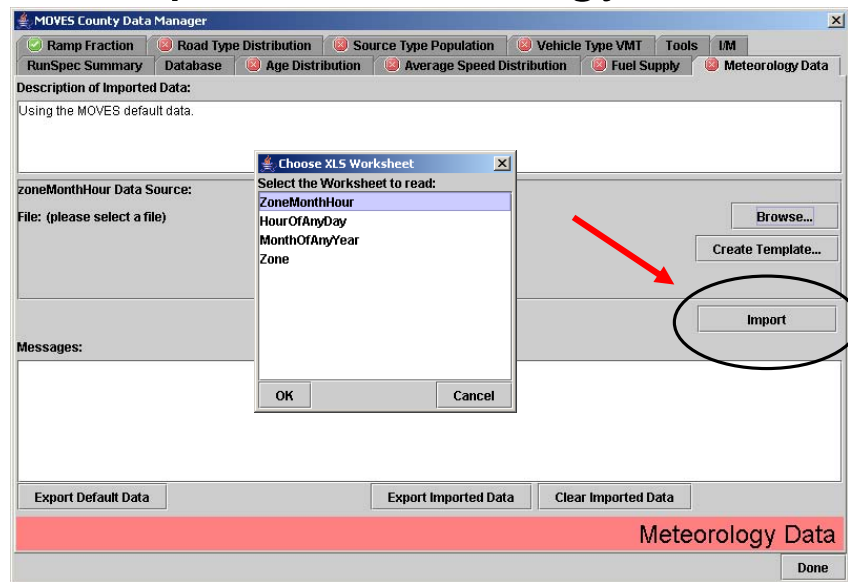
Importing Data

- Data can be read directly from the MS Excel worksheet tabs.
- Browse to find and select the MS Excel file.
- Be sure to add a description of the data you are about to import.
- Select the appropriate tab (usually the first one).
- Click on the Import button after you have selected the spreadsheet file and tab location.
- You should get an “Import Complete” message.

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Description data will help you keep track of what you have already put into the database you are creating.

Import Meteorology Data



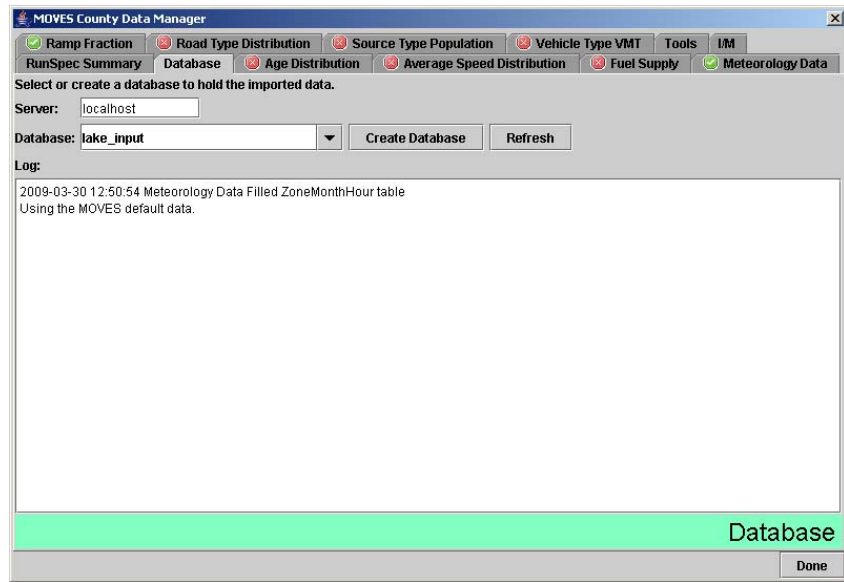
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Select the ZoneMonthHour tab (with the temperature and humidity data). In the template and export spreadsheets the first tab in the workbook usually contains the information you will want to import.

Data Successfully Imported

- Check to see if you get an “Import Complete” message.
- When the import is successfully completed the red “X” will change to a green check on the County Data Manager tab.
- The description you entered will appear in the log, which can be viewed on the database tab.

Import Success



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This panel shows where the comments we wrote on the import panel are displayed. These comments are stored in the database.

Repeat for all county-specific inputs

- Age distribution.
- Vehicle population by vehicle type.
- Annual VMT by vehicle type.
- Fuel specifications.
- Hourly temperature and humidity.
- Distribution of VMT by road type.
- Distribution of speed by road type.
- Ramp fraction (optional).
- Inspection/maintenance program description.

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Default Ramp Fraction is 8% of VMT from Road Types 2 and 4 are on Ramps.

Use the Training_Lake Inputs:

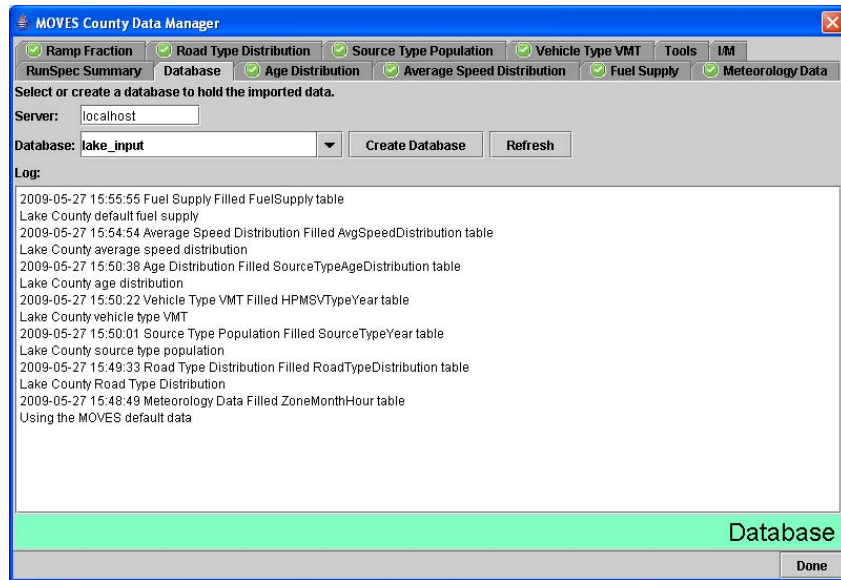
- **Use the Training_Lake inputs for:**
 - Age distribution.
 - Vehicle population by vehicle type.
 - Annual VMT by vehicle type.
 - Hourly temperature and humidity.
 - Distribution of VMT by road type.
 - Distribution of speed by road type.
- **Export/Import Defaults for Fuel Supply.**
- **Skip the I/M Editor – This will be discussed later.**
- **Skip the optional Ramp fraction.**

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Since we have a set of input files already populated, lets use them.

The Example City fuels will not work for Lake County, IN, without editing.

Fully Populated County Data



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This panel displays the times when changes were made to each table in our county database along with any comments we have provided.

Other Features

- **Database**
 - Used to select the database to be edited.
 - Displays the log of changes.
- **RunSpec Summary**
 - Contains a summary of the run specification.
 - Helpful as a reference while creating inputs.
- **Tools**
 - Generate importer XML file.
 - Used for batch operation.
 - Can be used to automate importing your data.

MOVES County Data Manager

☒ Ramp Fraction
 ☒ Road Type Distribution
 ☒ Source Type Population
 ☒ Vehicle Type VMT
 Tools
 IM

☒ RunSpec Summary
 ☒ Database
 ☒ Age Distribution
 ☒ Average Speed Distribution
 ☒ Fuel Supply
 ☒ Meteorology Data

Output Database Server Name: [using default]

Output Database Name: lake_mo

Time Spans:

Aggregate By: Hour

Years: 2013

Months: July

Days: Weekdays

Hours: Begin Hour: 12:00 - 12:59
End Hour: 12:00 - 12:59

Geographic Bounds:

COUNTY geography

Selection: INDIANA - Lake County

On Road Vehicle Equipment:

Gasoline - Passenger Car

Road Types:

Off-Network
Rural Restricted Access
Rural Unrestricted Access
Urban Restricted Access
Urban Unrestricted Access

Pollutants And Processes:

Running Exhaust Oxides of Nitrogen
Running Exhaust Total Gaseous Hydrocarbons

Manage Input Data Sets:

RunSpec Summary

Done

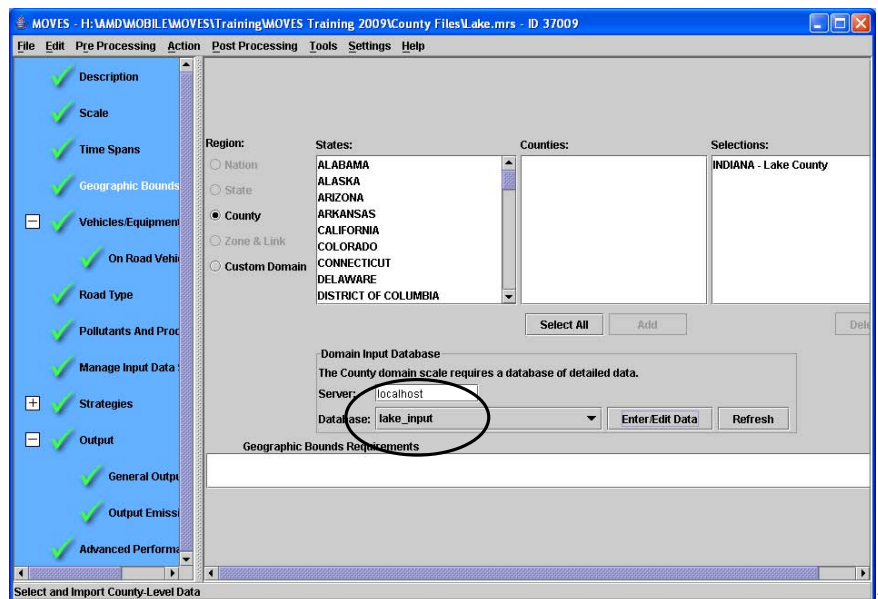
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This panel displays the run specification information that governs the content of the county database we have created.

Back to Geographic Bounds

- Click Done to close the County Data Manager.
- Click Refresh to update the list of databases.
- Select your database from the list.
- Continue to build your run specification.

Select your new database.



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This panel shows where on the panel you select the county database you wish to use for this run.

If you do not have a county database yet, you select Enter/Edit Data to go to the County Data Manager.

MOBILE6 to MOVES Converters



Developing inputs: Comparison to MOBILE6

- **MOBILE6:** VMT fractions, road type distribution (fraction of total VMT), ramp fraction, speed distribution, age, fuels, met data
 - Total VMT (or VMT by road type, time of day, etc) applied outside model
 - RVP, temperature & year only inputs required for model to run
- **MOVES:** Sourcetypepopulation, total VMT by vehicle type, road type distribution (fraction of total VMT), ramp fraction, speed distribution, age, fuels, met data

Developing inputs: Key differences from MOBILE6

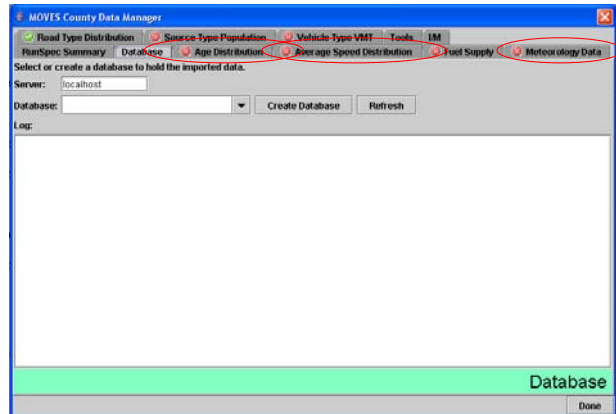
- **MOVES needs the number of vehicles (population) by vehicle type.**
 - Not typically available in SIPs.
 - Will need guidance.
- **MOVES needs vehicle miles traveled by vehicle type (not MOBILE6 VMT fractions).**
 - VMT data exists in SIPs or use HPMS data.
 - Need to map local data to new MOVES vehicle categories.
 - Will need guidance.

Convertors

- **Convertors are spreadsheets that convert MOBILE6 external input file data into MOVES compatible data.**
- **Converted inputs can be read directly by the County Data Manager from the spreadsheets.**
- **You do not need convertors if you can enter the data directly.**

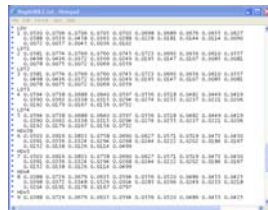
Available Converters

- Speed
- Registration Distribution
- Temperature

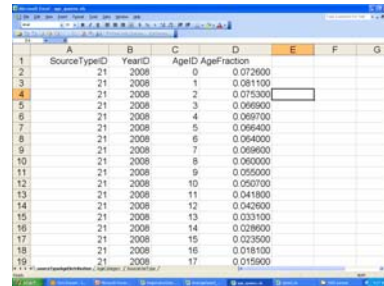


Age Distribution

- Uses MOBILE6 registration distribution files
- Converts to MOVES Age Distribution input file



A screenshot of a text file containing MOBILE6 registration distribution data. The file lists various source types and their corresponding age distribution fractions for different years (2008, 2010, 2012, 2014, 2016, 2018, 2020, 2022, 2024, 2026, 2028, 2030, 2032, 2034, 2036, 2038, 2040, 2042, 2044, 2046, 2048, 2050, 2052, 2054, 2056, 2058, 2060, 2062, 2064, 2066, 2068, 2070, 2072, 2074, 2076, 2078, 2080, 2082, 2084, 2086, 2088, 2090, 2092, 2094, 2096, 2098, 2100).



A screenshot of a spreadsheet showing MOVES Age Distribution input file data. The spreadsheet has columns for SourceTypeID, YearID, AgeID, and AgeFraction. The data is organized by SourceTypeID (1 to 19) and YearID (2008 to 2100). The AgeID column shows values from 0 to 17, and the AgeFraction column shows values from 0.012600 to 0.015900.

SourceTypeID	YearID	AgeID	AgeFraction
1	2008	0	0.012600
2	2008	1	0.081100
3	2008	2	0.075300
4	2008	3	0.066900
5	2008	4	0.066700
6	2008	5	0.066400
7	2008	6	0.064000
8	2008	7	0.066600
9	2008	8	0.060000
10	2008	9	0.055000
11	2008	10	0.050700
12	2008	11	0.041800
13	2008	12	0.042600
14	2008	13	0.033100
15	2008	14	0.028600
16	2008	15	0.023500
17	2008	16	0.018100
18	2008	17	0.015900
19	2008	17	0.015900

Uses standard 10-10-5 MOBILE6 age distribution tables

MOBILE6 input tab.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	REG ID																	
2	LD																	
3	1	0.07627	0.09032	0.09036	0.08016	0.07495	0.07096	0.06405	0.06024	0.05998	0.05293							
4		0.04619	0.04286	0.03761	0.03116	0.02468	0.01622	0.01479	0.01203	0.00962	0.00557							
5		0.00414	0.00301	0.00224	0.00283	0.01426												
6	T1																	
7	2	0.08992	0.09872	0.09913	0.07863	0.07599	0.07446	0.054	0.06141	0.06026	0.04917							
8		0.04024	0.03446	0.02894	0.02639	0.02315	0.01653	0.01649	0.01535	0.01317	0.00749							
9		0.00896	0.00667	0.00336	0.00457	0.02062												
10	T2																	
11	3	0.08992	0.09872	0.09913	0.07863	0.07599	0.07446	0.054	0.06141	0.06026	0.04917							
12		0.04024	0.03446	0.02894	0.02639	0.02315	0.01653	0.01649	0.01535	0.01317	0.00749							
13		0.00896	0.00667	0.00336	0.00457	0.02062												
14	T3																	
15	4	0.14705	0.18227	0.13654	0.14564	0.06791	0.07436	0.04776	0.04732	0.0287	0.02556							
16		0.01903	0.01517	0.01247	0.01181	0.00922	0.00512	0.00687	0.00692	0.00667	0.0037							
17		0.00445	0.00225	0.00184	0.00314	0.00831												
18	T4																	
19	5	0.14705	0.18227	0.13654	0.14564	0.06791	0.07436	0.04776	0.04732	0.0287	0.02556							
20		0.01903	0.01517	0.01247	0.01181	0.00922	0.00512	0.00687	0.00692	0.00667	0.0037							
21		0.00445	0.00225	0.00184	0.00314	0.00831												
22	V2																	
23	6	0.12134	0.1432	0.14418	0.09409	0.06247	0.08917	0.04199	0.05866	0.033	0.03881							
24		0.02518	0.01968	0.01916	0.01567	0.01515	0.01078	0.00962	0.01031	0.0092	0.0054							
25		0.00899	0.00667	0.00415	0.00422	0.0101												
26	V3																	
27	7	0.05725	0.10687	0.12463	0.13621	0.03641	0.08177	0.04712	0.00353	0.07707	0.04727							
28		0.03479	0.0276	0.02877	0.02026	0.02143	0.01057	0.0094	0.00984	0.00568	0.00338							
29		0.00426	0.00455	0.00206	0.00411	0.01527												
30	V4																	
31	8	0.07671	0.1075	0.15192	0.14151	0.05437	0.08764	0.00069	0.09186	0.04345	0.03128							
32		0.02507	0.01639	0.01887	0.01216	0.00968	0.00497	0.00472	0.00472	0.00521	0.00223							
33		0.00273	0.00223	0.00149	0.00497	0.01763												
34	V5																	
35	9	0.07132	0.11904	0.15199	0.16725	0.04919	0.06568	0.03591	0.04624	0.03246	0.02459							
36		0.02804	0.02115	0.02556	0.01869	0.01862	0.02558	0.01918	0.00984	0.0123	0.00492							
37		0.01131	0.01131	0.00492	0.00036	0.02607												
38	V6																	
39	10	0.04611	0.0757	0.11178	0.12425	0.08699	0.05908	0.04821	0.00036	0.03915	0.04547							

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Input tab

Results for MOVES.

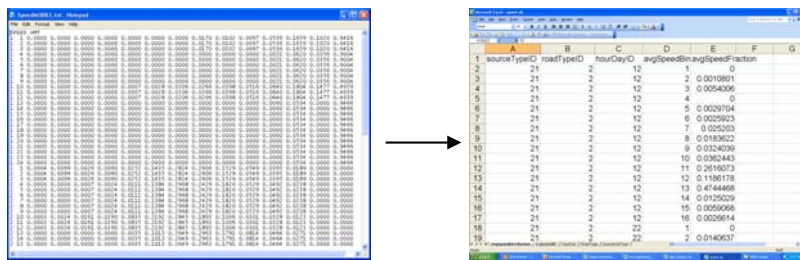
SourceID	YearID	AgeID	AgeFraction
1	11	0	0.133990
2	11	1	0.146960
3	11	2	0.114040
4	11	3	0.093900
5	11	4	0.066700
6	11	5	0.051590
7	11	6	0.045480
8	11	7	0.043300
9	11	8	0.039510
10	11	9	0.031090
11	11	10	0.018740
12	11	11	0.012660
13	11	12	0.013140
14	11	13	0.012240
15	11	14	0.012460
16	11	15	0.010890
17	11	16	0.020260
18	11	17	0.019660
19	11	18	0.012790
20	11	19	0.014070
21	11	20	0.017810
22	11	21	0.011510
23	11	22	0.011170
24	11	23	0.009270
25	11	24	0.007693
26	11	25	0.006395
27	11	26	0.005299
28	11	27	0.004397
29	11	28	0.003649
30	11	29	0.003029
31	11	30	0.013848
32	21	0	0.076270
33	21	1	0.090200
34	21	2	0.092660
35	21	3	0.090160
36	21	4	0.074960
37	21	5	0.070560
38	21	6	0.064020

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Output tab with containing data for MOVES County Data Manager AgeDistribution input file

Speed Converters

- Available for NMIM and MOBILE6 speed tables
 - NMIM converter uses 18 speed files: 9 FW, 9 AR
 - MOBILE6 converter uses 2 speed files: Urban, Rural
- Converts into MOVES compatible speed input file



The image shows two screenshots of the Speed Converter software. The left screenshot displays a list of speed files. The right screenshot shows a table of converted data with the following columns: sourceTypeID, roadTypeID, hourDayID, avgSpeedBin, avgSpeedFraction, and an empty column G.

sourceTypeID	roadTypeID	hourDayID	avgSpeedBin	avgSpeedFraction	
1	21	2	12	1	0
2	21	2	12	2	0.0010801
3	21	2	12	3	0.0054006
4	21	2	12	4	0
5	21	2	12	5	0.0029704
6	21	2	12	6	0.0025923
7	21	2	12	7	0.0025203
8	21	2	12	8	0.0183622
9	21	2	12	9	0.0324039
10	21	2	12	10	0.0362443
11	21	2	12	11	0.2616073
12	21	2	12	12	0.1186178
13	21	2	12	13	0.4744468
14	21	2	12	14	0.0125029
15	21	2	12	15	0.0006066
16	21	2	12	16	0.0029614
17	21	2	22	1	0
18	21	2	22	2	0.0140037

MOBILE6 input for urban.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1	0.0083	0.0272	0.0021	0.0024	0.0017	0.0081	0.0344	0.0536	0.0614	0.07	0.2607	0.115	0.265	0.0212							
2	0.026	0.0066	0.0076	0.0156	0.0052	0.0026	0.0344	0.0361	0.036	0.0435	0.2453	0.1729	0.3023	0.0129							
3	0.0259	0.0033	0.0054	0.0057	0.0126	0.0201	0.0342	0.0349	0.0407	0.0369	0.2161	0.1005	0.4399	0.0127							
4	0.0145	0.0096	0.0021	0.0022	0.0041	0.0166	0.0232	0.0373	0.0410	0.0449	0.2348	0.119	0.4422	0.0177							
5	0.0083	0.0096	0.0052	0.0032	0.004	0.0163	0.0232	0.0364	0.0375	0.042	0.2352	0.117	0.4454	0.0177							
6	0.0072	0.0034	0.0042	0.0096	0.0121	0.0244	0.0289	0.0327	0.0401	0.0392	0.2294	0.1011	0.4538	0.0137							
7	0.0103	0.0023	0.0044	0.0087	0.0147	0.0201	0.0235	0.0326	0.0345	0.0354	0.2294	0.0964	0.4547	0.0126							
8	0.0083	0.0075	0.0052	0.0043	0.0054	0.0182	0.0257	0.0381	0.038	0.0421	0.2258	0.1119	0.4512	0.0184							
9	0.0113	0.0065	0.0052	0.0023	0.0039	0.0206	0.0279	0.0368	0.0383	0.0517	0.2147	0.1151	0.4484	0.0183							
10	0.0155	0.0075	0.0034	0.0042	0.0061	0.0272	0.0324	0.0363	0.0316	0.039	0.2124	0.0644	0.5	0.0181							
11	0.0146	0.0111	0.0225	0.0199	0.0384	0.0316	0.05	0.0488	0.0446	0.0666	0.2223	0.1002	0.2957	0.0145							
12	0.0196	0.0113	0.0046	0.011	0.0183	0.0261	0.0488	0.0383	0.0314	0.0534	0.2235	0.1237	0.3736	0.0174							
13	0.0176	0.0064	0.001	0.0024	0.0034	0.0155	0.0191	0.0315	0.0357	0.0515	0.2134	0.0674	0.5170	0.0173							
14	0.0135	0.0043	0.0031	0.001	0.0012	0.0094	0.0177	0.0250	0.0264	0.055	0.206	0.096	0.5209	0.0177							
15	0.0094	0.0031	0.0025	0.0007	0.0012	0.0069	0.0166	0.0216	0.0257	0.0476	0.2169	0.1048	0.5228	0.0202							
16	0.0054	0.0010	0.0010	0.0004	0.0011	0.0045	0.0155	0.0175	0.025	0.0401	0.2277	0.1117	0.5246	0.0229							
17	0.0027	0.001	0.0014	0.0002	0.0011	0.0020	0.0147	0.0147	0.0245	0.0352	0.235	0.1162	0.5259	0.0246							
18	0.0013	0.0006	0.0012	0.0001	0.0011	0.002	0.0144	0.0133	0.0242	0.0327	0.2386	0.1185	0.5265	0.0255							
19	0	0.0001	0.001	0	0.0011	0.0012	0.014	0.0119	0.024	0.0302	0.2422	0.1208	0.5271	0.0284							
20	0	0.0013	0	0	0.001	0.0015	0.0097	0.02	0.0241	0.245	0.1205	0.5271	0.0310								
21	0	0.0003	0.001	0	0.0008	0.0103	0.0086	0.0181	0.0206	0.2464	0.1301	0.5271	0.0347								
22	0	0.0013	0	0	0.0008	0.0107	0.0081	0.017	0.0199	0.2451	0.1341	0.5271	0.0359								
23	0.0021	0.0003	0	0.001	0.001	0.0110	0.01	0.0205	0.0224	0.2452	0.1274	0.5271	0.0312								
24	0.0031	0.0003	0	0.001	0.0001	0.0011	0.0134	0.0124	0.024	0.0267	0.2404	0.1226	0.5271	0.0278							
25	0.0004	0.0052	0.0061	0.0053	0.0158	0.0954	0.321	0.1382	0.2904	0.0595	0.0628	0.0103	0.0095	0.0001							
26	0.0036	0.0029	0.0059	0.0234	0.0735	0.1114	0.2842	0.095	0.2533	0.0386	0.0089	0.0107	0.0169	0							
27	0.0033	0.0021	0.0032	0.0005	0.0438	0.113	0.2914	0.1076	0.2836	0.0434	0.0119	0.0091	0.0204	0							
28	0.003	0.0015	0.0011	0.0015	0.0183	0.1001	0.291	0.1246	0.3013	0.0535	0.0743	0.0094	0.0204	0							
29	0.003	0.0014	0.0005	0.0017	0.0181	0.1000	0.2980	0.1246	0.3015	0.0527	0.0751	0.0094	0.0204	0							
30	0.0034	0.0017	0.0021	0.0049	0.0344	0.1091	0.2984	0.1125	0.2932	0.046	0.0735	0.0093	0.0205	0							
31	0.004	0.0021	0.0027	0.0078	0.0427	0.1134	0.2857	0.1083	0.2966	0.0427	0.0724	0.0091	0.0205	0							
32	0.0038	0.0025	0.002	0.0022	0.0216	0.1034	0.2834	0.1243	0.302	0.0515	0.0736	0.0094	0.0203	0							
33	0.0041	0.0024	0.002	0.0034	0.0249	0.1049	0.2844	0.1215	0.2906	0.0489	0.0751	0.0093	0.0205	0							
34	0.0052	0.0027	0.0032	0.006	0.045	0.1151	0.2822	0.1024	0.2836	0.0419	0.0777	0.0096	0.0203	0							
35	0.0049	0.0165	0.0087	0.0224	0.0652	0.1222	0.2809	0.0959	0.2557	0.0405	0.0651	0.0095	0.0125	0							
36	0.0055	0.0071	0.0062	0.0219	0.0675	0.1189	0.2771	0.0915	0.2637	0.0394	0.0712	0.0106	0.0194	0							
37	0.0043	0.0054	0.0016	0.0038	0.0255	0.1005	0.2849	0.1205	0.2906	0.0487	0.0761	0.01	0.0211	0							
38	0.0028	0.0021	0.0018	0.0015	0.0115	0.0724	0.2223	0.1219	0.317	0.0541	0.0754	0.01	0.0211	0.0001							

Urban input tab

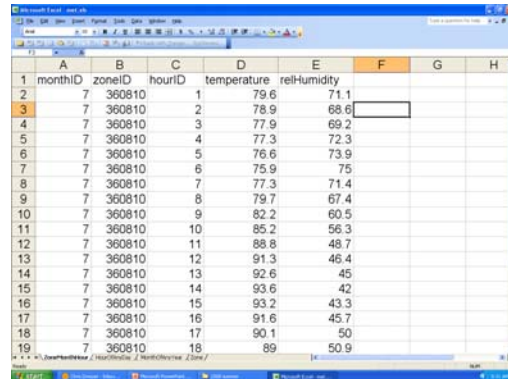
Results for MOVES.

sourceTypeID	roadTypeID	hourDayID	avgSpeedBinID	avgSpeedFraction
11	2	72	1	0.102472
11	2	72	2	0.167905
11	2	72	3	0.064816
11	2	72	4	0.046092
11	2	72	5	0.033488
11	2	72	6	0.047038
11	2	72	7	0.035392
11	2	72	8	0.047267
11	2	72	9	0.047378
11	2	72	10	0.049012
11	2	72	11	0.154757
11	2	72	12	0.064538
11	2	72	13	0.131176
11	2	72	14	0.065738
11	2	72	15	0.003711
11	2	72	16	0.001221
11	2	82	1	0.309917
11	2	82	2	0.039336
11	2	82	3	0.022648
11	2	82	4	0.030992
11	2	82	5	0.042018
11	2	82	6	0.038859
11	2	82	7	0.034170
11	2	82	8	0.030736
11	2	82	9	0.026920
11	2	82	10	0.028006
11	2	82	11	0.146197
11	2	82	12	0.083679
11	2	82	13	0.150141
11	2	82	14	0.023371

Output tab for MOVES County Data Manager AverageSpeedDistribution input file. The converter only gives age distribution for weekends (hourdayID=2). Weekdays can be added by copying and pasting the output distribution below the weekend distribution and changing the hourdayID to end in 5 instead of 2 (eg. 75 rather than 72).

Temperature Converter

- Some M6 users input MAX and MIN daily temperature
 - MOVES requires 24 values
- Fills in all 24 hours based on diurnal temperature curve
- MOBILE6 day begins at 6am
- MOVES day begins at 12am



	A	B	C	D	E	F	G	H
	monthID	zoneID	hourID	temperature	rel-humidity			
1	7	360810	1	79.6	71.1			
2	7	360810	2	78.9	68.6			
3	7	360810	3	77.9	69.2			
4	7	360810	4	77.3	72.3			
5	7	360810	5	76.6	73.9			
6	7	360810	6	75.9	75			
7	7	360810	7	77.3	71.4			
8	7	360810	8	79.7	67.4			
9	7	360810	9	82.2	60.5			
10	7	360810	10	85.2	56.3			
11	7	360810	11	88.8	48.7			
12	7	360810	12	91.3	46.4			
13	7	360810	13	92.6	45			
14	7	360810	14	93.6	42			
15	7	360810	15	93.2	43.3			
16	7	360810	16	91.6	45.7			
17	7	360810	17	90.1	50			
18	7	360810	18	89	50.9			

Converts Min/Max to hourly.

Microsoft Excel - Min_Max.xls

File Edit View Insert Format Tools Data Window Help

MS Sans Serif 10

File Edit View Insert Format Tools Data Window Help

Type a question for help

Min_Max.xls

Creating a Revised Temperature Cycle

Enter:

Min Temp: 63.0

Max Temp: 98.0

Time	Hour	Standard	Revised
Midnight	19	77.2	70.6
1:00 AM	20	75.8	68.5
2:00 AM	21	74.7	66.9
3:00 AM	22	73.9	65.8
4:00 AM	23	73.3	64.9
5:00 AM	24	72.6	63.9
6:00 AM	1	72.0	63.0
7:00 AM	2	72.5	63.7
8:00 AM	3	75.5	68.1
9:00 AM	4	80.3	75.1
10:00 AM	5	85.2	82.3
11:00 AM	6	89.4	88.4
NOON	7	93.1	93.8
1:00 PM	8	95.1	96.7
2:00 PM	9	95.8	97.7
3:00 PM	10	96.0	98.0
4:00 PM	11	95.5	97.3
5:00 PM	12	94.1	95.2
6:00 PM	13	91.7	91.7
7:00 PM	14	88.6	87.2
8:00 PM	15	85.5	82.7
9:00 PM	16	82.8	78.8
10:00 PM	17	80.8	76.0
11:00 PM	18	79.0	73.2
Midnight	19	77.2	70.6
1:00 AM	20	75.8	68.5
2:00 AM	21	74.7	66.9
3:00 AM	22	73.9	65.8
4:00 AM	23	73.3	64.9
5:00 AM	24	72.6	63.9

Min_Max

Ready

start

Class Overview - 3400...

Microsoft PowerPoint...

Microsoft Excel - Min_Max...

3:43 PM

50

Cannot be used for humidity. Currently being developed

Miscellaneous

- Currently MOVES requires annual VMT - MOVES disaggregates to time period (hour, day).
- Watch your units (e.g., use of “tons” might result in 0 emissions for low-emission pollutants and short time periods, due to rounding)
- CDM and Project Level won’t work with databases that contain data for multiple years.
- EPA is developing alternative approaches and guidance to generate data for:
 - Age Distribution
 - Source Type Population